



Mirror mode waves in Venus's magnetosheath: Solar minimum vs. solar maximum

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The occurrence rate of mirror mode waves in Venus's magnetosheath for solar maximum conditions is studied and compared with previous results for solar minimum conditions. It is found that the occurrence rate is approximately twice as high for solar maximum as compared with solar minimum. This is caused by the increase in solar UV radiation, ionizing more neutrals from Venus's exosphere. The distribution of strengths of the mirror mode waves is shown to be exponential, with the same coefficient for solar maximum and minimum, which means that the energy distribution of the newly formed and heated ions behind the bow shock is the same in both cases. The distribution of the length of the wave-trains is shown to be almost exactly the same, which may be related to the diffusion mechanism of the mirror mode waves in Venus's magnetosheath.